Michigan Department of Community Health
Bureau of Laboratories
Division of Chemistry and Toxicology

Paint Chip Sampling Procedure for Lead

The preferred method for sampling paint is by x-ray fluorescence (XRF) testing. If conducting paint chip sampling, it should always be done **after** dust sampling to minimize the possibility of cross-sample contamination, since paint chip sampling may release a small quantity of lead dust. Although paint chip samples are to be collected from inconspicuous areas, the occupant and owner must always be notified that paint chip sampling may be necessary.

Contents

1. Paint Chip Sampling Tools and Materials:

a. Cutting and scraping tool, such as: sharp stainless steel paint scraper (available at many paint stores), razor knife, pocket knife, putty knife, chisels, or hammer.
b. Disposable wipes for cleaning paint scraper
c. Non-sterilized non-powdered disposable gloves
d. Screw-top plastic centrifuge tubes for paint chip samples. Note: resealable plastic bags (e.g. Ziplock baggies) **are not suitable** for transporting dried paint samples.
e. Collection device (clean creased piece of paper or cleanable tray)
f. Environmental Lead Sampling Requests DCH-0558 December 2011.
g. Ladder
h. Plastic trash bags
i. Flashlight
j. Adhesive tape
k. Steel or plastic ruler marked in inches OR a flat reusable aluminum or steel sampling template with an inside square of 1 inch by 1 inch.
l. Permanent marker
m. Disposable cloths, for cleaning sampling equipment
n. Heat gun or other heat source operating below 1100E F to soften the paint before removal (optional). If using a heat gun, personal safety gear such as safety glasses, half-mask respirators with organic vapor/HEPA filters, and a fire extinguisher is recommended.
o. Letter-size white paper for making paint collection funnels

2. Containment:

A clean sheet of plastic measuring four feet by four feet should be placed under the area to be sampled to capture any paint chips that are not captured by the collection device or creased piece of paper. Any visible paint chips falling to the plastic should be included in the sample. Dispose of the plastic at the dwelling. Wet wipes may be used to clean the area.

3. Paint Sample Collection:

NOTE: Composite paint chip sampling is NOT permitted in Michigan.

The paint chip sample need not be more than 1" x 1" in size. New disposable gloves should be worn for each sample.

First, wipe clean the surface of the area being tested if there are visible signs of dust or dirt. Then, using a marker or scoring with a blade, mark the sampling location. If using a template, be sure to wipe the sampling template with a clean disposable cloth before and after each use.

Next, create a paper funnel using a sheet of white paper, using tape to secure the bottom corners so that the paper overlaps and there is no gap. Tape the funnel to the surface directly below the area you have marked for sampling.

The most common paint sampling method is to scrape paint directly off the substrate. The goal is to remove all layers of paint equally, but none of the substrate. Including substrate in the sample will dilute the lead content.

A heat gun can be used to soften the paint before removal to reduce the chances of including substrate with the sample and to help prevent sample loss. Hold the heat gun no closer than six inches from the surface. Do not scorch the paint. Discontinue heating as soon as softening or blistering is observed. Note: do not use a heat gun unless you are wearing proper respiratory protection.

Use a razor-sharp scraper to remove all paint within the marked area from the substrate. If using a coring tool, use a scraper to remove any extra paint within the area scored by the coring tool. All scraped paint should land in the paper funnel.

Remove the paper funnel from the surface and carefully tap the collected paint into the paint chip container.

4. Cleanup and Repair:

a. Dispose of gloves and paper funnels in a trash bag after each sample is collected.

b. You must clean up all settled dust generated using wet wipes.

c. Clean cutting tools with a cloth, and coring tools with a bottle brush and cloth.

d. The surface can be resealed with new paint if necessary. If desired, apply spackling and/or

new paint to repair the area where paint was removed.

e. Personnel conducting paint sampling should avoid hand-to-mouth contact (specifically: smoking, eating, drinking, and applying cosmetics) and should wash their hands with running water immediately after sampling. The inspector should ask to use the resident's bathroom for this purpose. Wet wipes may be used if running water or the bathroom is not available.

5. Form Completion and Fees:

a. Label containers with at least two (and ideally three or more) identifiers, using either a pre-printed label or permanent marker. The identifiers should include a sample number and a site identifier, (such as street address), as well as the location where the sample was taken (such as room number). Identifiers should match the sample numbers on the Environmental Lead Sampling Requisition form.

b. Fill out the Environmental Lead Sampling Request completely.

c. Chain of custody requirements should be followed if applicable.

d. Fees: Contact the MDCH lab for information about fees. Fee-based samples will only be accepted from counties with certified lead inspectors. A check payable to the State of Michigan and a list of clients must be submitted with each specimen. Attach the check to the Environmental Lead Sampling Request. A billing procedure for testing services may also be arranged with the laboratory. Local public health departments are exempt from a fee when submitting public health-related samples, which are environmental lead specimens for lead-poisoned client. Individuals wishing to submit samples should contact their local health department to arrange billing, submittal, and payment.

6. Quality Assurance/Quality Control:

Any sample submitted with an insufficient sample size (< 100 mg), will need additional samples collected. If analyzed, an insufficient sample will be indicated on the report in the ID#/Condition field.

Any questions or problems concerning environmental sampling results should be directed to:

MDCH Trace Metals Laboratory
3350 N. Martin Luther King Blvd.
Lansing, MI 48909
Phone: (517) 335-8244
Fax: (517) 335-9776
Email: knottnerusm@michigan.gov or larivierec@michigan.gov

Questions on sampling procedures can be directed to the MDCH Healthy Homes Section at 1-866-691-LEAD.

7. Lead Hazard Identification:

In accordance with Michigan administrative rule R325.99402 and the U.S. Environmental Protection Agency 40 CFR Part 745.227, the following lead levels became effective for lead hazard control activities in the state of Michigan on March 6, 2001:

Lead-based paint: >5,000 μg/g (0.5%) or 1.0 mg/cm^2.

8. References:

a. ASTM E 1729-05. Standard practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination. Copies are available (for a fee) on the ASTM website at: http://www.astm.org/Standards/E1729.htm

b. *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, U.S. Department of Housing and Urban Development, June, 1995. Copies of the Guidelines are available (for free) on the HUD website at: http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/lbp/hudguidelines.